

*FUNCTIONAL ANALYSIS AND TREATMENT OF
SOCIAL-COMMUNICATIVE BEHAVIOR OF ADOLESCENTS WITH
DEVELOPMENTAL DISABILITIES*

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This investigation used functional analyses to identify the social variables that maintained the inappropriate social-communicative behaviors of 2 adolescent students with mental retardation. Analyses were performed in the students' classrooms with the assistance of peers and teachers. The results of these assessments were used to identify appropriate, functionally equivalent behaviors that the students were taught to self-monitor. Findings showed substantial decreases in inappropriate social responding and increases in the use of appropriate social skills.

DESCRIPTORS: functional analysis, social skills, self-management, developmental disabilities, teacher training

Inappropriate social-communicative behaviors observed among students with developmental disabilities typically are considered and treated as skill or performance deficits (e.g., Elliott & Gresham, 1993). That is, inappropriate social behaviors may be learned operants that are maintained by social reinforcement contingencies, and appropriate alternatives may occur at low rates for at least two reasons: (a) They may not be in a student's repertoire, or (b) they may not be reinforced in the social environment. In either case, consideration of the operant function of inappropriate and appropriate social behavior may lead to more effective interventions

(Kennedy & Shukla, 1995). Functional analysis methods have not yet been shown to identify contingencies of reinforcement for social-communicative behavior such as repetitive speech, lack of eye contact, or inappropriate tone of voice. The purpose of this study was to investigate the use of functional analyses to determine the possible maintaining variables for inappropriate social-communicative behaviors that occur during typical conversational interactions and to teach functionally equivalent social skills as derived from the functional analyses.

METHOD

Two high school students with moderate to severe mental retardation participated. Both were served in a special education class, participated in general education classrooms, and took part in community-based instruction twice per week. Ned was 18 years old and had been referred by his teacher for high rates of perseverative speech involving repeated utterances. Donna was 17 years old and

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had been referred for inappropriate affect in the form of laughter and displays of disgust, as well as lack of eye contact during conversation.

During assessment sessions, the participant, teacher, and at least one peer sat around a large table in the classroom. During baseline and treatment sessions, students could choose whatever work or leisure activities they wanted. Response definitions for participants' inappropriate and functionally equivalent social behaviors were developed. For Ned, perseverative utterances with interresponse times of less than 5 s were scored as inappropriate. For Donna, lack of eye contact with a conversation partner or any focal point of the conversation for longer than 5 s was scored as inappropriate. Also, the display of any affect that was exaggerated or incongruent to the conversation was also scored as inappropriate. Sessions lasted 10 min. Responses were recorded during assessment, baseline, and treatment sessions by two trained observers using data sheets and event recording. These measures were calculated and evaluated as number of responses per minute. For purposes of confirming point-by-point interobserver agreement, the data sheets were divided into 10-s intervals. Using total-agreement-within-intervals logic, interobserver agreement was calculated for each interval by dividing agreements by agreements plus disagreements. All intervals were then averaged to calculate percentage agreement. Interobserver agreement was calculated for each participant for 70% of the functional assessment sessions and 32% of baseline and treatment sessions. Overall agreement averaged 98% for inappropriate behavior during assessment, 97% for inappropriate behavior during baseline and treatment, and 100% for appropriate alternative behaviors during baseline and treatment. To increase procedural integrity, an experimenter provided feedback to the participating teacher during the sessions throughout the study.

A functional analysis was conducted in the classroom during daily home-room class periods using a modification of the methods described by Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994). An escape-social condition was included to test for a sensitivity to escape from social demands. In this condition, the teacher maintained conversation throughout the 10-min session, asking questions at a rate of approximately one every 15 s. Inappropriate behavior resulted in removal of the social demand for approximately 30 s. In an escape-task condition, the teacher provided continual academic demands that were also removed for approximately 30 s upon the participant's demonstration of inappropriate social behavior. In a social-attention condition, the teacher addressed her conversation to the participant's peer rather than to the participant. Upon demonstration of inappropriate social behavior, attention was immediately directed to the participant for approximately 30 s. A leisure condition was also conducted, in which noncontingent attention was provided approximately every minute. A teacher and a peer took part in all assessment sessions. During the functional analysis, the remaining students in the class engaged in free time, during which they were allowed to choose whatever work or leisure activities they wished.

Treatments were developed based on the results of the functional analyses and consisted of three major components: extinction, reinforcement of an alternative response, and reinforcement of self-monitoring. Within a multiple baseline design across participants, the students were taught to self-monitor the use of functionally equivalent social-communicative behaviors using the methods described by Koegel and Frea (1993). Each participant took part in a 90-min pretreatment session, in which modeling was used to assist him or her in differentiating inappropriate social responses from appropriate alternative responses. For Ned, perseverative speech no

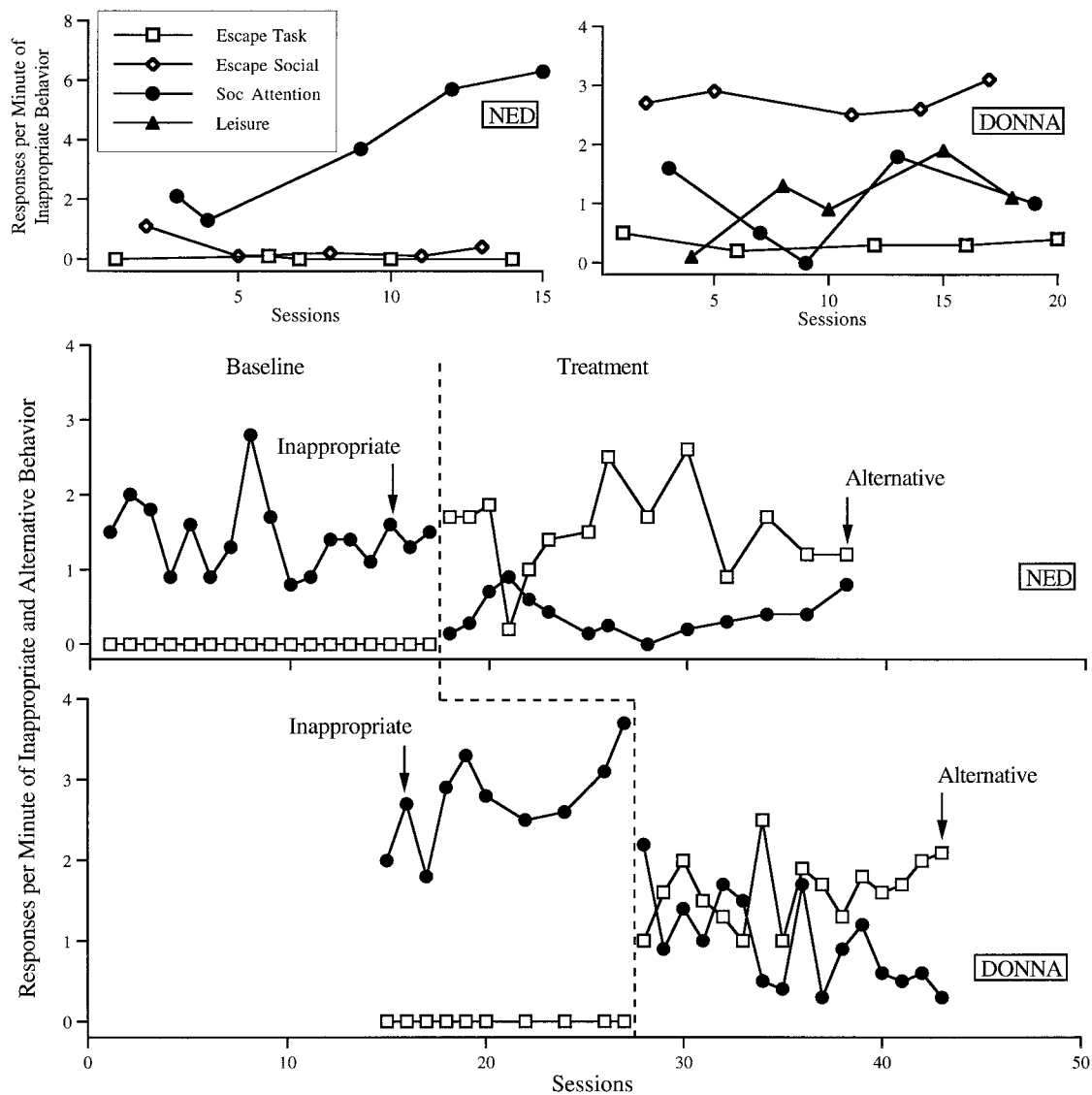


Figure 1. Top panel: rate (responses per minute) of inappropriate behaviors for Ned and Donna during functional analysis. Bottom panel: rate of inappropriate and alternative behaviors by Ned and Donna during baseline and treatment conditions.

longer received attention. Saying "excuse me" did produce attention, and correct scoring on a wrist monitor produced access to newspapers after each session for approximately 5 min. For Donna, inappropriate affect and eye contact no longer resulted in escape from social demands. The use of the phrase, "I don't know," did produce escape from demands, and correct monitoring using beads on a

bracelet produced access to nail polish after each session for approximately 5 min.

RESULTS AND DISCUSSION

The top panel of Figure 1 shows the results of the functional analyses. The leisure sessions were not plotted for Ned because

the teacher attended to his inappropriate behavior continuously; the condition was therefore indistinguishable from the social attention condition in terms of function and effect. Results indicated that Ned's inappropriate social behavior occurred during social attention at a mean rate of 3.82 responses per minute. This clearly differentiated from the escape-social and escape-task conditions, which produced mean rates of 0.38 and 0.02 responses per minute, respectively. The highest rates for Donna were observed in the escape-social conditions, which had a mean rate of 2.76 responses per minute (compared to 0.34 responses per minute in escape-task sessions, 0.98 responses per minute in social attention sessions, and 1.06 responses per minute in leisure sessions).

The lower panel of Figure 1 shows the results of baseline and treatment. Both students showed increases in the alternative functional responses they had been taught. These increases were accompanied by collateral decreases in inappropriate social responding for both participants. During baseline, Ned displayed a mean rate of 1.4 inappropriate social responses per minute. In treatment, Ned's perseverative speech decreased to a mean of 0.4 responses per minute, and "excuse me" increased to 1.51 responses per minute. During baseline, Donna displayed a mean rate of 2.74 inappropriate social responses per minute. In treatment, Donna's inappropriate affect and lack of eye contact decreased to a mean rate of 0.98 occurrences per minute, and "I don't know" increased to 1.63 responses per minute.

This study extends the functional analysis literature to include social-communicative behaviors for 2 individuals with moderate to severe mental retardation. It demonstrates that, for some students, it is possible to identify the maintaining variables of inappropriate social behavior by performing assessments in relevant social environments. A limitation of this study was that the independent effects of reinforcement for self-monitoring versus positive (for Ned) and negative (for Donna) social reinforcement for the alternative social behaviors were not evaluated. Nonetheless, the outcome of treatment suggested functional equivalence between inappropriate social behavior and adaptive alternatives. Future research might isolate the independent effects of the treatment package.

REFERENCES

- Elliott, S. N., & Gresham, F. M. (1993). Social skills interventions for children. *Behavior Modification*, 17, 287-313.
- Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1994). Toward a functional analysis of self-injury. *Journal of Applied Behavior Analysis*, 27, 197-209. (Reprinted from *Analysis and Intervention in Developmental Disabilities*, 2, 3-20, 1982)
- Kennedy, C. H., & Shukla, S. (1995). Social interaction research for people with autism as a set of past, current, and emerging propositions. *Behavioral Disorders*, 21, 21-35.
- Koegel, R. L., & Frea, W. D. (1993). Treatment of social behavior in autism through the modification of pivotal pragmatic skills. *Journal of Applied Behavior Analysis*, 26, 369-377.

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